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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JONATHAN QIANG LI

Appeal 2009-004128
Application 10/817,660
Technology Center 2600

Before ELENI MANTIS MERCADER, CARL W. WHITEHEAD, JR., and BRADLEY W. BAUMEISTER, *Administrative Patent Judges.*

BAUMEISTER, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. §§ 6(b) and 134(a) from the Examiner's final rejection of claims 1-26.

We REVERSE.

> [Appellant's invention relates to a computer readable medium including executable instructions,] systems and methods for processing training data for a statistical classification application . . . . [C]onfidence values are calculated for training data elements to identify the probabilities of the training data elements belonging to identified classes. An interactive scatter plot is generated using the calculated confidence values. The scatter plot visually indicates the confidence values of points in the scatter plot. Accordingly, the user is able to identify potentially misclassified training data elements.

(Abstract).

Independent claim 1 is illustrative,[2] reading as follows:

> 1. A computer readable medium including executable instructions for processing training data for a statistical classification application, said computer readable medium comprising:
>
> code for retrieving a plurality of training data structures that each comprise data members corresponding to feature elements and a data member identifying one of a plurality of classes;
>
> code for processing each of said plurality of training data structures using probabilistic models that are a function of said feature elements to calculate a respective probability indicative of the respective training data structure belonging to its identified class; and

[2] Independent claims 11 and 22, the only other independent claims, are respectively directed to a corresponding method and system for processing the training data.

> code for generating a scatter plot, using said plurality of training data structures, that visually indicates probabilities of said training data structures belonging to identified classes.

Claims 1-12, 22, and 23 stand rejected under 35 U.S.C. § 102(e) as anticipated by Loui (US 7,039,239 B2; May 2, 2006, filed February 7, 2002).

Claims 13-21 and 24-26 stand rejected under 35 U.S.C. § 103(a) as obvious over Loui in view of Andrew W. Donoho et al., *MacSpin: Dynamic Graphics on a Desktop Computer*, 8 IEEE COMPUTER GRAPHICS & APPLICATIONS 51-58 (July 1988).

The Examiner interprets Loui's feature extraction process 12, where features are extracted from a color image 10 (*see, e.g.*, Loui Fig. 1; col. 3, ll. 38-44), as corresponding to the claimed "code for retrieving a plurality of training data structures." (Ans. 4, 18-20). Appellant argues *inter alia* that such an interpretation is improper because of the following reasons. Each of the claimed training data structures, Appellant argues, comprises data members that correspond to feature elements and *also* a data member identifying one of a plurality of classes (App. Br. 11). "Loui's feature extraction stage extracts, from an image, features (or feature sets) of *unknown classification*[, so] . . . none of the features (or feature sets) extracted from the image 10 are associated with any sort of 'data member identifying one of a plurality of classes'" (*id.*). Furthermore, while Loui's labeled training data 24 does constitute "training data structures" as recited in the claims, "Loui only discloses how to use the labeled training data 24 to classify the image 10. Loui does not disclose any method for calculating a probability indicative of whether any item *of the labeled training data 24* belongs to its identified class" (App. Br. 11-12).

ISSUE and CONCLUSION

The issue before us, then, is: Does Loui disclose calculating respective confidence values for each of a plurality of accessed training data structures? We agree with Appellant that Loui does not disclose this feature.

ANALYSIS

Loui is directed towards the processing and classification of images (col. 1, ll. 5-9). More specifically, Loui discloses a technique for the probabilistic classification of image regions for a color image 10 to generate "a class probability map over the input image representing the probability of each pixel to have come from a given class" (col. 3, ll. 38-41; Fig. 1). The classes may correspond to the low level features of an image such as color, textures, and shapes (claim 23), or the classes may correspond to semantic level features such as faces, people, and structures (claim 24).

Loui's process entails an initial step 12 of extracting feature data from the color image 10 and then two concurrent steps of performing unsupervised learning (step 14) and supervised learning (step 16) in order to respectively generate a cluster probability map 26 and a class probability map 28 (Fig. 1). The results of these two maps are merged to produce a modified class probability mad 30 (*id.*).

The supervised learning step 16 employs labeled training data 24 to generate the class probability map (*id.*). The training data of the supervised learning step is data that has already been assigned to a particular classification (col. 1, ll. 56-63; col. 4, ll. 12-16). We understand training data to be distinguishable from unclassified data, which is image data that is used in unsupervised learning 14.

The data extracted from color image 10 in feature extraction process 12 does not constitute "training data" because Loui does not disclose that any classification information corresponds to the image data at the time of extraction. Furthermore, while Loui's training data 24 is used to classify the image 10, Loui does not disclose calculating any probabilities for whether any item of the labeled training data 24, itself, belongs to its identified class.

For the foregoing reasons, then, Appellant has persuaded us of error in the Examiner's anticipation rejection of independent claims 1, 11, and 22. Accordingly, we will not sustain the Examiner's rejection of those claims or of claims 2-10, 12, or 23 which depend from these independent claims. With respect to the remaining obviousness rejection of dependent claims 13-21 and 24-26, Donoho does not cure the deficiency explained above.

DECISION

We do not sustain the Examiner's rejections with respect to all pending claims on appeal. Therefore, the Examiner's decision rejecting claims 1-26 is reversed.

REVERSED

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